AMENDMENTS TO THE CLAIMS:

Please cancel Claims 5, 13 and 14 and amend Claims 1, 8, 9, 10 and 12 as follows:

1. (Currently Amended) An active radio frequency cavity amplifier comprising:

a housing defining an input cavity, an output cavity and at least one gap for each of the input and output cavities;

a plurality of transistors mounted to said housing, each of said plurality of transistors having a respective input lead and a respective output lead;

a first RF power coupling mechanism disposed within the housing in proximity to the input cavity for coupling RF power from a source into the input cavity to generate an RF field;

a first conducting assembly having a plurality of conductors, each conductor configured to contact a respective input lead of the plurality of transistors for coupling the RF field in the input cavity to the respective input leads of the plurality of transistors via the at least one gap of the input cavity;

a second conducting assembly having a plurality of conductors, each conductor configured to contact a respective output lead of the plurality of transistors for inducing an RF field in the output cavity ~~coupled to the output leads of~~ from said plurality of transistors via the at least one gap of the output cavity ~~to amplify the RF power from the source~~; and

a second RF power coupling mechanism disposed within the housing in proximity to the output cavity for coupling amplified RF power from the amplified RF field in the output cavity to a load, wherein each of said first and second RF power coupling mechanisms include a respective plunger assembly having a corresponding plunger configured to move within said housing.

2. (Previously Amended) An active radio frequency cavity amplifier as in Claim 1, wherein said housing is cylindrically-shaped, wherein the at least one gap for the input cavity is an annular cavity encircling said input cavity and the at least one gap for the output cavity is an annular cavity encircling said output cavity.

3. (Original) An active radio frequency cavity amplifier as in claim 2, wherein said annular cavities are configured to act as RF chokes to prevent the amplified RF power from being short-circuited.

4. (Previously Amended) An active radio frequency cavity amplifier as in Claim 1, wherein said housing is comprised of a conductive material.

5. (Canceled) An active radio frequency cavity amplifier as in Claim 1, wherein each of said first and second RF power coupling mechanisms include a respective plunger assembly having a corresponding plunger configured to move within said housing.

6. (Original) An active radio frequency cavity amplifier as in Claim 5, wherein said plunger assembly of said first RF power coupling mechanism is configured for tuning a resonant frequency of said input cavity, and said plunger assembly of said second RF power coupling mechanism is configured for tuning a resonant frequency of said output cavity.

7. (Previously Amended) An active radio frequency cavity amplifier as in Claim 5, wherein said respective plunger assembly includes:

a coupling capacitor including a conducting cylindrical plunger having a first end and a second end, at least one dielectric disc being coupled to said second end; and

a coaxial section having a center conductor and a matching section disposed in a channel of said cylindrical plunger.

8. (Currently Amended) A method for amplifying RF power comprising the steps of:

coupling RF power to an active radio frequency cavity amplifier comprising a housing defining an input cavity, an output cavity and at least one gap for the input and output cavities and a plurality of transistors mounted in proximity to said input and output cavities and each of said plurality of transistors having ~~an~~ a respective input lead and ~~an~~ a respective output lead;

tuning the resonant frequency of the input cavity and the resonant frequency of the output cavity;

coupling the RF field in the input cavity to the respective input leads of the plurality of transistors via the at least one gap of the input cavity;

inducing an amplified RF field in the output cavity coupled to the respective output leads of the plurality of transistors via the at least one gap of the output cavity; and

coupling amplified RF power from the amplified RF field in the output cavity out of said active radio frequency cavity amplifier.

9. (Currently Amended) An RF power amplifier comprising:

means for coupling RF power to an active radio frequency cavity amplifier comprising a housing defining an input cavity, an output cavity and at least one gap for the input and output cavities;

means for coupling an RF field within the input cavity, wherein a plurality of transistors are mounted in proximity to said input and output cavities and each of said plurality of transistors having a respective input lead and a respective output lead; and

means for coupling the RF field in the input cavity to the respective input leads of the plurality of transistors via the at least one gap of the input cavity;

means for tuning the resonant frequency of the input cavity and the resonant frequency of the output cavity; and

means, coupled to the output leads of the plurality of transistors, for inducing an amplified RF field in the output cavity, ~~coupled to the output leads of the plurality of transistors~~ via the at least one gap of the output cavity.

10. (Currently Amended) An RF power amplifier as in Claim 9, further comprising:

~~means for tuning the resonant frequency of the input cavity and the resonant frequency of the output cavity; and~~

means for coupling amplified RF power from the amplified RF field in the output cavity.

11. (Previously Amended) An RF power amplifier comprising:

means for coupling RF power to an active radio frequency cavity amplifier comprising a housing defining an input cavity, an output cavity, and at least one gap for the input and output cavities;

means for coupling an RF field within the input cavity, wherein a plurality of transistors are mounted in proximity to said at least one gap for the input and output cavities and each of said plurality of transistors having a respective input lead and a respective output lead; and

means for tuning the resonant frequency of the input cavity and the resonant frequency of the output cavity.

12. (Currently Amended) An RF power amplifier as in Claim 11, further comprising:

means for coupling the RF field in the input cavity to the input leads of the plurality of transistors via the at least one gap of said input cavity and for ~~coupling~~ exciting an RF field in the output cavity to the output leads of the plurality of transistors via the at least one gap of the output cavity; and

means for inducing an amplified RF power from the amplified RF field in the output cavity.

13. (Canceled) An active radio frequency cavity amplifier comprising:

a housing defining an input cavity, an output cavity, an annular cavity encircling said input cavity, and an annular cavity encircling said output cavity;

a plurality of transistors mounted to said housing, each of said plurality of transistors having an a respective input lead and an a respective output lead;

a first RF power coupling mechanism disposed within the housing in proximity to the input cavity for coupling RF power from a source into the input cavity to generate an RF field;

a first conducting assembly having a plurality of conductors, each conductor configured to contact a respective input lead of the plurality of transistors for coupling the RF field in the input cavity to the input leads of the plurality of transistors;

a second conducting assembly having a plurality of conductors, each conductor configured to contact a respective output lead of the plurality of transistors for inducing

an RF field in the output cavity coupled to the output leads of the said plurality of transistors to amplify the RF power from the source; and

a second RF power coupling mechanism disposed within the housing in proximity to the output cavity for coupling amplified RF power from the output cavity to a load.

14. (Canceled) A method for producing amplified RF signals, comprising the steps of:

providing a source for generating an RF signal;

coupling the source for generating an RF signal to an input cavity having at least one gap in proximity thereto;

coupling the RF signal between said input cavity and each input lead of a plurality of transistors via the at least one gap;

coupling an amplified output RF signal, produced by said plurality of transistors, between the output leads of said plurality of transistors and an output cavity via at least one gap in proximity to the output cavity; and

coupling said amplified output RF signal within said output cavity to a load.

Please add the following new claim:

15. (New) An active radio frequency cavity amplifier comprising:

a housing defining an input cavity, an output cavity and at least one gap for each of the input and output cavities;

a plurality of transistors mounted to said housing, each of said plurality of transistors having a respective input lead and a respective output lead;

a first RF power coupling mechanism disposed within the housing in proximity to the input cavity for coupling RF power from a source into the input cavity to generate an RF field;

a first conducting assembly having a plurality of conductors, each conductor configured to contact a respective input lead of the plurality of transistors for coupling the RF field in the input cavity to the respective input leads of the plurality of transistors via the at least one gap of the input cavity;

a second conducting assembly having a plurality of conductors, each conductor configured to contact a respective output lead of the plurality of transistors for inducing an RF field in the output cavity from said plurality of transistors via the at least one gap of the output cavity; and

a second RF power coupling mechanism disposed within the housing in proximity to the output cavity for coupling amplified RF power from the amplified RF field in the output cavity to a load, wherein said housing is cylindrically-shaped, wherein the at least one gap for the input cavity is an annular cavity encircling said input cavity and the at least one gap for the output cavity is an annular cavity encircling said output cavity, and wherein said annular cavities are configured to act as RF chokes to prevent the amplified RF power from being short-circuited.